

Title: Standardization for information exchange in Brazilian private healthcare

Subtitle: Brazilian national standard for electronic form exchange among private health plans and healthcare providers

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Abstract

The challenge of establishing a national standard electronic form exchange among health plans organizations (HPOs) and healthcare providers (HPs) is huge. In fact, many HPOs have been trying to establish it since the 1990s with no success.

The National Supplementary Health Agency – NSHA (“Agência Nacional de Saúde Suplementar- ANS”), Ministry of Health) was created in 2000 and is in charge of regulating and assisting the private HPOs and their relationships with HPs. Since 1988 the Brazilian Federal Constitution declared health care as a public right and then the public sector has been structuring its information systems. The public information systems have defined standard schemes, such as the National Health Card Project, in order to institute a national unique identifier health care and to construct a national repository of health records. However the private sector has been operating since 1960s but without any government regulation at all and therefore with no standard processes. It serves approximately twenty-five per cent of the Brazilian population (estimated as 180 million of people).

The NSHA has been constructing its information system mainly by collecting the market information. The lack of widely common information standards in the private sector and the difficulties involved in the complex information exchange among private HPOs and HPs have caused NSHA to work out a proposal for a national standard for electronic form exchange proposal, based on XML technology, known as the supplementary health information exchange (TISS – “Troca de Informação em Saúde Suplementar”). The TISS project aims integrating healthcare information nationwide; therefore it was developed in accordance with the National Health Card Project, using the same unique identifiers and others standard sets proposed by the Ministry of Health, such as unique identifiers of providers.

The NSHA has presented the TISS project successfully to all stakeholders and is introducing legislation to enforce the standards. There are more than two thousands private HPOs in the whole country and more than ten thousands hospitals and clinics. Private health practioners, including dentists, will also have to adopt the standard. The TISS’s project focus is not only on the patient billing but also on epidemiological information. Standardization of health information will certainly produce stimulus to innovation, increase competition, reduce risks, promote interoperability among information systems and diffuse equal outcomes to consumers.

Keywords:

Public information; Information Management; Information Systems; Medical Informatics; Electronic Data Interchange.

Objective:

The National Supplementary Health Agency – NSHA (“*Agência Nacional de Saúde Suplementar*”) was created in 2000 and is responsible for regulating and assisting Brazilian private health plans organizations (HPOs) all around the country as well as their relationship with the healthcare providers (HPs). There are more than two thousands HPOs and more than ten thousands hospitals and clinics in Brazil. It should be noted that some HPs have more than a hundred of HPOs contracted. Supplementary health attends approximately 25 per cent of Brazilians, estimated as 180 million of people.

The private healthcare sector has been operating since 1960s, even a little before, without any government regulation at all. There are different kinds of organizations such as physicians’ and dentists’ groups, insurance companies, employer sponsored, professional associations, philanthropic and odontological care organizations. All these kinds of organizations differ mainly in their forms of management. Some of them aim no profit, others share their profit within the group or do not provide a medical network but only free choices.

Berg (1999) considers that information asymmetries are at the core of the regulators’ problem. The NSHA collects economic, demographic and epidemiological information from all the HPOs. With all the collected information the NSHA has built a comprehensive database. Nevertheless, the NSHA has found many difficulties in analysing these information, mainly concerned to epidemiological issues. The HPOs’ arguments are that they also find difficulties in collecting detailed and structured health information from the HPs. On the other hand, the HPs complain that the variety of HPOs’ forms increase administrative costs and make necessary to hire a great number of billing specialists. It is important to mention that in 1990s many HPOs have tried to implement standard information exchange with many others HPs with no success. Both HPOs and HPs have argued that the administrative costs are higher and higher but no consensus has been reached until now.

Consequently the NSHA decided to develop a standard health information project, known as the supplementary health information exchange (TISS – “*Troca de Informação em Saúde Suplementar*”), sponsored by the Interamerican Development Bank. The project began in August 2003 and ended in July 2004. Its objective is to establish a national standard information exchange between health plans organizations (HPOs) and healthcare providers (HPs) centred on epidemiological analysis. The building blocks of the project are the unique keys for identifying beneficiaries, health plan organizations and health plans characteristics (types of coverage and regions code) and also providers. These unique keys are already implemented in the whole country except the beneficiaries ones which are under implementation. The standard information exchanged among HPOs and HPs will certainly contribute with public policies in accordance with the Ministry of Health. As a matter of fact, the project’s objective is not creating new information but organizing the existing ones in order to uniform the patient billing exchanged among HPOs and HPs.

Methods:

First of all, a deep research was made by the NSHA internal workgroup regarding all health information already exchanged between HPOs and HPs; Ministry of Health and HPs; Ministry of Health and HPOs; and NSHA and HPOs. Afterwards more than fifty claims exchanged between HPOs and HPs were analyzed and some visits and interviews were also made to HPOs' and HPs' managers to discuss which relevant information should be exchanged, not only for billing purpose but also for epidemiological analysis. The NSHA could be aware of the great quantity of human involvement required to process patient billing in a hospital, for instance.

At the same time, the NSHA internal workgroup studied some international standards: HIPAA, ISO/TC 215 and Health Level Seven. Some public health information systems were also analyzed to identify the national unique keys already in use in Brazil such as:

- National Health Card, in order to adopt the same national unique beneficiaries identifier;
- National Providers Database, in order to adopt same national unique identifier for the providers. This database includes all types of medical and odontological providers: physicians, dentists, clinics, hospitals and so on.

Some private health information systems, developed by NSHA for information collection from the HPOs, were also analyzed to identify the unique keys already in use in the private market such as:

- private health plans organizations database, in order to adopt one same national unique identifier for the health plan organization;
- health plan registration database, in order to adopt one same national unique identifier for the health plan.

Only after all this research, the NSHA defined the standardization for the patient billing: consultation, exams, hospitalization authorization, hospitalization itself and odontological treatment. The forms were built in blocks: HPOs identifiers, HPs identifiers, beneficiaries' identifiers and the billing information. Once the set of information was designed, it was easier to define the electronic exchange format.

The electronic form exchange is based on XML technology, a standard defined by the World Wide Web Consortium. Extensible Markup Language (XML) is a simple, very flexible text format derived from SGML (ISO 8879). Originally designed to meet the challenges of large-scale electronic publishing, XML is also playing an increasingly important role in the exchange of a wide variety of data on the Web and elsewhere. The XML Schemas, which provide mechanisms to define and describe the structure, content, and to some extent semantics of XML documents, have been structured for all the messages that will be exchanged, based on the patient billing.

The data dictionary was also structured containing the variable name, type, size and format. In addition to the billing form, a standard form (called return-form) to be sent from the HPOs to the HPs was also designed. Nowadays few HPs receive any sort of report about what is going to be paid, or not, by the HPOs. The return-form also has a schema XML definition to describe all the data covered. This kind of report is really important to the HPs considering that they have hundreds of HPOs contracted.

As soon as the standardization proposal designed by the NSHA was ready, it was presented to HPOs and HPs in seminars and meetings organized in different regions in Brazil. At that moment, the NSHA had a doubt whether to present the standards as voluntary or mandatory ones. Although the NSHA presented the standard as a voluntary one, both HPOs and HPs complained that it should be mandatory otherwise it could be another great failure. They considered that a voluntary standard is likely to be appropriate if the number of organizations involved is small and that self-regulation may not be a practical solution if the problem is wider and if there is disagreement to enforce. The majority of HPOs and HPs considered the project as the most important that the NSHA had ever developed. It is relevant to mention that for the small HPOs and HPs the project, sponsored by the Interamerican Development Bank, also included a software development in order to facilitate the electronic exchange.

Results:

The HPOs have usually argued that there is an enormous difficulty in calculating the mandatory health indicators collected by NSHA, such as: child mortality rate, maternal mortality rate, perinatal mortality rate, hospitalization and ambulatorial morbidity rate by pregnancy, childbirth and puerperium and live births by maternal age. These difficulties are related to the insufficient information exchanged with the HPs. So the HPOs believe that improving the information exchange will definitely improve all market knowledge.

Health information technology has the potential to reduce medical costs, improve health care quality, to decrease paperwork burden for HPOs and HPs, to increase ability to develop quality measures and to easier implementation of disease management programs. The Ministry of Health has become increasingly supportive of health IT. So, electronic data interchange (EDI) in private healthcare market will definitely bring many advantages.

It has been a historical fact in Brazil bringing together HPOs and HPs to discuss electronic standard information exchange in order to facilitate patient billing and epidemiological analysis. Many groups have been formed all around the country in order to adapt their billing forms. A permanent national health information standards advisory committee is being created so that future changes should be deeply discussed among experts including representatives of HPOs, HPs, consumers, purchasers and policy makers. And any modification to the standard should only take place after 12-month period; beginning at the date the standard is initially adopted.

In February 2005 the proposed version of the TISS standards was submitted to a two-month stakeholders comment. The NSHA is now analysing the proposals, making the necessary changes and consolidating the legislation. The legislation to enforce the compliance to the standards will be released very soon.

Conclusions:

Standard information exchange on private health sector is the only way to improve health policies, to construct a solid set of quality measures and to establish accountability in healthcare market. The NSHA regulators, like others, rely on data furnished by the HPOs to develop appropriate mechanisms for regulating quality of service. So it is really relevant that patient health information adopt standardization. The HPOs, as the private healthcare market as a whole, will be able to provide meaningful information to the NSHA as well as consumers and purchasers. The TISS project will certainly stimulate innovation, increase competition, reduce risks, promote interoperability among different information systems and diffuse equal outcomes to the beneficiaries

In conclusion, the process of managing a national standard information exchange between HPOs and HPs will be constantly evolving and broad-based participating.

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